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EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT

PAPER NUMBER

2859

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/672,462

Applicant(s)

HOSLER ET AL.

Examiner

Gail Verbitsky

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7,8,16,18,20,21 and 24-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7,8,16,18,20,21 and 24-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 1 is finally objected to because of the following informalities:

Claim 1: A) perhaps applicant should add –in each receptacle—after “material” in line 5 in order to clearly describe the invention,

B) Perhaps applicant should insert –of the samples—after “temperature” in line 8 in order to clearly describe the invention,

C) Perhaps applicant should insert –the samples—after “which” in line 9 in order to clearly describe the invention,

D) Perhaps applicant should insert –held in the receptacles—after “any sample” in line 11 in order to clearly describe the invention,

E) Perhaps applicant should add –from the receptacles—after “removal” in line 12 in order to clearly describe the invention,

F) Perhaps applicant should insert –before submersing—after “sample” in line 4 in order to clearly describe the invention. Since, according to claim 1, the receptacles are empty only before submersing and filled out with the samples after submersing.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1-5, 7-8 are finally rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

Art Unit: 2859

which applicant regards as the invention. In this case, the claim language is confusing because it is not clear whether each receptacle holds a sample after submersing or not. Furthermore, please note that in the rejection on the merits, the Examiner considered that each receptacle holds a sample after submersing.

Claims 2-5 and 7-8 are finally rejected by virtue of their dependency on claim 1.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 16, 18, 24-25 and 28-29 are finally rejected under 35 U.S.C. 102(b) as being anticipated by over Bates (U.S. 6220748) [hereinafter Bates 2].

Bates 2 discloses in Figs. 1-2, abstract and entire col. 2, a device and a method in the field of applicant's endeavor, wherein the method including contacting a molten material (aluminum smelting bath) bath with a probe/ body/ conduit made of a stainless steel (which, inherently, has the same physical properties as the stainless steel claimed by applicant including not undergoing a phase change upon cooling) having a test conduit (receptacle) and a reference conduit (receptacle) and a respective open end empty test sensor 30 with a test thermocouple and a reference sensor 20 with a reference thermocouple connected by a single handle (one-piece/ integral) 44.

Furthermore, Bates 2 teaches removing the reference and test sensors from the molten

Art Unit: 2859

material, detecting temperature difference between the sensors as the sample material cooled down, e.g. to 250⁰ C, cooling rate (temperature difference to time) is determined in order to determine concentration of (test material) aluminum smelting/ NaF:AlF₃ concentration. The reference material 23 can be any suitable stable material, i.e., aluminum, stainless steel in a form of solid (col. 3, lines 2-3 and col. 2, line 61).

Also, the differential temperature profile shows the temperature at which liquidus begins to freeze. In addition, the amount of superheat can be obtained (col. 4, lines 1-16). The liquidus temperature of the test sample indicates the temperature at which the molten sample begins to freeze (solidify).

Bates 2 measures a first temperature with the temperature sensors, and a second temperature, wherein the second temperature is a liquidus temperature at a peak temperature (i.e., when the cooling rate changes).

By determining the liquidus temperature of the test sample, the superheat or over-temperature of the bath can be determined (col. 6, lines 1-5).

The device also comprising an analyzer 40 in communication with the temperature sensor of the sample and the temperature sensor of the reference for determining difference between their temperatures. The analyzer, inherently, comprising means for determining if the temperature is a desired/ baseline (according to specification) temperature, alumina concentration, the ration of aluminum fluoride to the amount of sodium fluoride and bath superheat (abstract).

For claim 18: Before immersion, the sample holder is open, empty and does not contain neither sample or reference material.

Art Unit: 2859

For claims 24-25 and 28-30: The method steps will be met during the normal operation of the device stated above.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 21 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Bates 2 in view of Nakashima et al. (U.S. 5037211) [hereinafter Nakashima].

Bates 2 discloses the device as stated above.

Bates 2 does not explicitly teach that the thermocouple is a K-type calibrated thermocouple.

Nakashima teaches to use a K-type thermocouple to measure temperature of the molten metal. It is inherent, that, before the use, the thermocouple should be calibrated, so as to obtain accurate data.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the thermocouple, disclosed by Bates 2, with the K-type thermocouple, as taught by Nakashima, because both of them are alternate types of the thermocouples which will perform the same function, of measuring the temperature of the molten metal, if one is replaced with the other.

Art Unit: 2859

The method steps will be met during the normal operation of the device stated above.
and col. 2, line 61).

8. Claims 20, 26-27 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Bates 2 in view of Clark et al. (U.S. 3882727) [hereinafter Clark].

Bates 2 discloses the device as stated above in paragraph 5.

Although Bates 2 states that the device can be used for other types of material, that could, in a broad sense suggest that the device is reusable, and thus, that the material should be removed from the sample receptacle after repeating all the steps of the method, and before using the receptacle/ body for another method (before re-submerging), Bates 2 does not explicitly teach this limitation.

Clark discloses in Figs. 1-2 a device in the field of applicant's endeavor, wherein a sample container (receptacle) comprising a temperature sensitive means which is adapted to engage a sample during a test by a holding force, the holding force is released when the temperature sensitive means and thus, sample is re-heated after the test (col. 4, lines 51-59 and col. 5, lines 13-19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention, disclosed by Bates 2, so as to allow the operator to engage and disengage the sample in the container (receptacle), as taught by Clark, in order to avoid damaging the container, when the sample expand, and, thus, make the device re-usable, in order to minimize the operational and manufacturing costs.

Art Unit: 2859

With respect to the particular material, i.e., 304 L alloy stainless steel, as stated in claim 20, the use of the particular material, as stated in claim 20, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the device, disclosed by Bates 2, since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

The method steps will be met during the normal operation of the device stated above.

Allowable Subject Matter

9. Claims 1-5 and 7-8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Said claims would be allowable because the prior art fail to teach a pair of open empty receptacles in a body, neither of which contains a reference material before submersing, in combination with the remaining limitations of claims 1-5 and 7-8.

Response to Arguments

10. Applicant's arguments with respect to claims 16, 18, 20-21, 24-29 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2859

Applicant states that Bates 2 does not disclose a one-piece body with integrally formed sample receptacles. This argument is not persuasive because, as shown in Figs. 1-2, the device of Bates 2 is a single-piece integral unit (formed as a unit with another part, see Webster, 10th edition, page 607).

Applicant states that the probe of Bates 2 contains nine parts (additional parts) and thus, cannot be a one-piece body. This argument is not persuasive because, in the claims, the applicant does not claim that the probe is a single-piece integral body, instead, Applicant claims that the "probe comprising ... a one-piece steel body having a pair of integrally formed ... receptacles". Thus, in addition to "comprising a body", the probe can also comprise additional parts.

Applicant states that the Examiner does not have a motivation to combine Bates and Clark since Bates device is not reusable. This argument is not persuasive because, A) Bates is silent that the device is reusable, however, Bates does not state that the device is disposable, thus, Bates does not teach away from the modification used by the Examiner. Also, B) in response to applicant's argument that there is no suggestion to combine references, the Examiner recognizes that there should be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. the test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971). The references are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA) 1969.

Conclusion

12. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 2859


mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Falk (U.S. 5720553) and Perbix et al. (U.S. 3559452) teach to use a reusable lance to obtain a molten sample.

Any inquiry concerning this communication should be directed to the Examiner Verbitsky who can be reached at (571) 272-2253 Monday through Friday 8:00 to 4:00 ET.

GKV

Gail Verbitsky 
Primary Patent Examiner, TC 2800

January 25, 2005